an outlet to expel water;

a passage formed in the reactor, wherein the inlet is disposed at one end of the passage and the outlet is disposed at another end of the passage so that hydrogen and oxygen flows through the inlet and into the passage; and

a catalyst material disposed in the passage so as to contact hydrogen and oxygen in the passage, the catalyst material having catalytic action activating reactivity for hydrogen, or oxygen, or both hydrogen and oxygen.

48. (NEW) A water-generating reactor as recited in claim 47, wherein the catalyst material has a form selected from the group consisting of a column filled with granular catalyst, a filter element including sintered material of powders or fibers, a laminate with laminated thin sheets, a honeycomb body, a mesh body, a sponge body, and a fin-shaped body.

49. (NEW) A water-generating reactor as recited in claim 47, wherein the catalyst material covers a surface selected from the group consisting of a surface of a pipe, a surface of a granule, a surface of a sintered material, a surface of a thin sheet laminate, a surface of a honeycomb body, a surface of a mesh body, a surface of a sponge body, and a surface of a fin-shaped body.

50. (NEW) A water-generating reactor as recited in claim 47, further comprising:

a casing, wherein the inlet is disposed at one end of the casing and the outlet is disposed on another end of the casing, the passage is disposed inside the casing; and

a heater is placed inside or outside of the casing.

51. (NEW) A water-generating reactor as recited in claim 47, wherein the catalyst material is nickel.

52. (NEW) A water-generating reactor as recited in claim 48, wherein the catalyst material is nickel.

53. (NEW) A water-generating reactor as recited in claim 49, wherein the catalyst material is nickel.

54. (NEW) A water-generating reactor as recited in claim 50, wherein the catalyst material is nickel.

55. (NEW) A water-generating reactor as recited in claim 50, wherein the catalyst material covers a surface of a first material, the first material being in the form of an item selected from the group consisting of a pipe, a granule, a sintered material, a thin sheet laminate, a honeycomb body, a mesh body, a sponge body, and a fin-shaped body.

56. (NEW) A water-generating reactor as recited in claim 47, further comprising:

a metal reactor body, wherein the inlet and the outlet are mounted on the reactor body, the outlet is a water and moisture gas take-out joint, the passage is an internal space defined

by recesses inside the reactor body, and the recesses include a first recess having a surface; and

a platinum coating film is disposed on the surface of the first recess surface, wherein when hydrogen and oxygen flowing from the inlet contact the platinum coating film, water is generated from reactivity of the hydrogen and the oxygen.

57. (NEW) A water-generating reactor as recited in claim 47, further comprising:

a reactor body made of a heat-resistant material, wherein the inlet and the outlet are mounted on the reactor body, the outlet is a water and moisture gas take-out joint, the passage is an internal space defined by recesses inside the reactor body, and the recesses include a first recess having a surface and a second recess having a surface;

a gas diffusing member disposed in the internal space; and

a platinum coating film is disposed on the surface of the first recess, wherein when hydrogen and oxygen supplied by the inlet and diffused by the gas diffusing member contact the platinum coating film, water is generated from reactivity of the hydrogen and the oxygen.

58. (NEW) A water-generating reactor as recited in claim 56, wherein the reactor body is made from heat-resistant metal, and the platinum coating film is 10Å to 0.5 mm thick and is formed by a method selected from the group consisting of a plating method, a sputtering method, a vapor deposition method, a cladding method, an ion plating method and a hot press method.

59. (NEW) A water-generating reactor as recited in claim 56, wherein the reactor body is made from heat-resistant metal, and the platinum coated film is a film 10Å to 0.5 mm thick formed on a barrier film of a non-metal material that is disposed on the surface of the first recess of the reactor body by one of a plating method, a sputtering method, a vapor deposition method, a cladding method, an ion plating method, or a hot press method.

60. (NEW) A water-generating reactor as recited in claim 56, wherein when gas is supplied to the reactor body, the gas is an oxygen rich gas having a ratio of oxygen to hydrogen that is $< \frac{1}{2}$, or a hydrogen rich gas having a ratio of oxygen to hydrogen that is $> \frac{1}{2}$.

61. (NEW) A water-generating reactor as recited in claim 57, wherein the gas diffusing member comprises a reflector plate located opposite the inlet and a filter located downstream of the reflector plate.

62. (NEW) A water-generating reactor as recited in claim 57, wherein the gas diffusing member comprises a reflector plate located opposite the inlet, a filter located downstream of the reflector plate, and a reflector plate located opposite the water and moisture gas outlet.

63. (NEW) A water-generating reactor as recited in claim 57, wherein the gas diffusing member comprises a cylinder filter, a conical filter, or a disk filter placed opposite the inlet.

64. (NEW) A water-generating reactor as recited in claim 57, wherein the gas diffusing member comprises a filter having a filter portion only at a peripheral surface portion, wherein the filter is placed opposite the inlet.

65. (NEW) A water-generating reactor as recited in claim 59, wherein the barrier film is made of at least one material selected from the group consisting of TiN, TiC, TiCN, and TiAlN.

66. (NEW) A water-generating reactor as recited in claim 57, wherein the reactor body is made from heat-resistant metal, and the platinum coating film is 10Å to 0.5 mm thick and is formed by a method selected from the group consisting of a plating method, a sputtering method, a vapor deposition method, a cladding method, an ion plating method and a hot press method.

67. (NEW) A water-generating reactor as recited in claim 57, wherein the reactor body is made from heat-resistant metal, and the platinum coated film is a film 10Å to 0.5 mm thick formed on a barrier film of a non-metal material that is disposed on the surface of the first recess of the reactor body by one of a plating method, a sputtering method, a vapor deposition method, a cladding method, an ion plating method, or a hot press method.

68. (NEW) A water-generating reactor as recited in claim 57, wherein when gas is supplied to the reactor body, the gas is an oxygen rich gas having a ratio of oxygen to hydrogen that is $< \frac{1}{2}$, or a hydrogen rich gas having a ratio of oxygen is hydrogen that is $> \frac{1}{2}$.

69. (NEW) A water-generating reactor as recited in claim 67, wherein the barrier film is made of at least one material selected from the group consisting of TiN, TiC, TiCN, and TiAlN.

70. (NEW) A water-generating reactor comprising:

a reactor body made of a heat-resistant material, wherein the reactor body includes a first reactor body member fixed to a second reactor body member, and wherein each of the first and second reactor body members has a recess formed on an inner surface;

a material gas inlet mounted on the first reactor body member to receive hydrogen and oxygen;

a water and moisture gas outlet mounted on the second reactor body member;

an internal space defined by the inner surface of the first reactor body member and the inner surface of the second reactor body member;

a gas diffusing member placed at the position opposite the material gas inlet and at the position opposite the water and moisture gas outlet; and

a platinum coating catalyst layer formed on the inner surface of the second reactor body member, wherein the platinum coating catalyst layer comprises a barrier film and a platinum coating film placed thereon, whereby, when hydrogen and oxygen supplied by the

inlet and diffused by the gas diffusing member contact the platinum coating catalyst layer, water is generated from the hydrogen and the oxygen.

71. (NEW) A water-generating reactor as recited in claim 70, wherein the platinum coating film comprises a platinum film 10Å to 0.5 mm thick, and the barrier film comprises a non-metal material disposed on the inner surface of the first reactor body member.

72. (NEW) A water-generating reactor as recited in claim 71, wherein the platinum coating film is deposited on the barrier film by a plating method.

73. (NEW) A water-generating reactor as recited in claim 71, wherein the platinum coating film is deposited on the barrier film by a sputtering method.

74. (NEW) A water-generating reactor as recited in claim 71, wherein the platinum coating film is deposited on the barrier film by a vapor deposition method.

75. (NEW) A water-generating reactor as recited in claim 71, wherein the platinum coating film is deposited on the barrier film by a cladding method.

76. (NEW) A water-generating reactor as recited in claim 71, wherein the platinum coating film is deposited on the barrier film by an ion plating method.

77. (NEW) A water-generating reactor as recited in claim 71, wherein the platinum coating film is deposited on the barrier film by a hot press method.

78. (NEW) A water-generating reactor as recited in claim 71, wherein the barrier film is made of at least one material selected from the group consisting of TiN, TiC, TiCN, and TiAlN.

79. (NEW) A water-generating reactor as recited in claim 70, wherein the gas diffusing member is disposed in the internal space.

80. (NEW) A water-generating reactor as recited in claim 70, wherein the gas diffusing member is a reflector plate.